

REMARKS

Claims 47-98 are pending in the present application. Claims 47-98 have been examined and are rejected. Applicant believes that the present application is now in condition for allowance, for which prompt and favorable action is respectfully requested.

Rejection of Claims 47-98 Under 35 U.S.C. §103(a)

Claims 47-72, 75, 78, and 81-93, 95-98 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,606,484 to Faulkner (hereinafter “Faulkner”) in view of U.S. Patent No. 6,437,644 to Kenington (hereinafter “Kenington”) and US Publication 2004/0032296 to Akaiwa (hereinafter “Akaiwa”).

Claims 73, 74, 76, 77, 79 and 80 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Faulkner in view of Kenington and Akaiwa, and in further view of U.S. Patent No. 5,541,990 to Rahamim (hereinafter “Rahamim”).

Claim 94 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Faulkner in view of Kenington and Akaiwa, and in further view of U.S. Patent No. 5,883,551 to Kimura (hereinafter “Kimura”).

Claim 97 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Faulkner in view of Kenington and Akaiwa, and further in view of U.S. Patent No. 5,883,551 to Marchesani, *et al.* (hereinafter “Marchesani”).

35 U.S.C. §103

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation of, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references must teach or suggest all the claim limitations.

For each §103(a) rejection in this Office Action, Applicants submit: the prior art of record does not provide a suggestion or motivation to modify the reference; there is not a reasonable expectation of success, and the reference does not teach or suggest all the claim limitations.

With reference to Claims 47-98, the examiner provides no suggestion or motivation in the cited references to make any modification. The examiner provides no other evidence to support the conclusion that the limitations would have been obvious to one of ordinary skill in the art. In each case, the Examiner has failed to present a convincing line of reasoning supporting the rejection. If the Examiner is relying on personal knowledge to support the finding of what is known in the art, Applicants request that Examiner provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding, per 37 CFR 1.104(d)(2).

Faulkner

Examples of the deficiencies of Faulkner as a prior art reference are detailed in the prior response, and are not repeated here. With respect to Faulkner, it is sufficient to note that Faulkner does not ever generate a squared version of the received RF signal. Rather, Faulkner teaches squaring a downconverted baseband signal. Therefore, Faulkner necessarily fails to teach a gain stage receiving the squared version of the received RF signal and reproducing second order nonlinear distortion in that gain stage. The Examiner has conceded this point as well, indicating that “Faulkner fails to disclose a squaring circuit for receiving a received RF signal provided to an input of a mixer in the receiver”.

The Examiner therefore relies on Kenington and Akaiwa to supply the teaching lacked by Faulkner. However, neither Kenington nor Akaiwa succeed in doing so.

Kenington

Again, deficiencies of Kenington as a prior art reference are detailed in the prior response, and are not repeated here. With respect to Kenington, it is sufficient to note that Kenington does not generate a second order nonlinear distortion that is coupled to an output of the receiver to generate a downconverted baseband signal characterized with reduced second order nonlinear distortion. Rather, Kenington teaches predistortion techniques for use in a transmitter for odd powers of 3 or greater. In fact, Kenington teaches away from using its techniques for second order nonlinear distortion.

Thus, as detailed in the prior response neither Faulkner, Kenington, nor their combination supply the teaching of reducing second order nonlinear distortion as recited in the claims. Thus, while the Examiner has asserted that the previous arguments are moot in view of the new grounds of rejection, this argument is not moot and remains valid since, as stated previously “Kenington specifically teaches away from using its techniques for second order nonlinear distortion, and is therefore not properly combined with Faulkner, Chapman, or **any other reference**” [emphasis added]. Substituting Akaiwa for Chapman does not invalidate this argument.

Additionally, as in the prior office action, the Examiner admits that Kenington and Faulkner fail “to disclose the use of a feed-forward technique in the nonlinear distortion circuit”. The Examiner relies on Akaiwa to supply the teaching lacked by Kenington and Faulkner. However, Akaiwa does not succeed in doing so.

Akaiwa

At the outset, it is important to note that Akaiwa is insufficient to cure the deficiencies of Faulkner and Kenington, such as reducing second order nonlinear distortion, for example, as described above. Therefore, whether or not Akaiwa teaches the use of feed-forward techniques is a moot point. Upon review, it turns out Akaiwa fails as a suitable reference in much the same way as Kenington.

The Examiner states simply “Akaiwa discloses this feature in FIG 1”. The Examiner supplies absolutely no additional comment regarding Akaiwa. Thus, the Examiner has failed to point out with particularity where the reference teaches the limitations as recited in the claims.

Akaiwa is absolutely silent as to second order nonlinear distortion. Akaiwa does not teach a squaring circuit, a gain stage, an output coupling circuit, or any of the other claim limitations of claim 47. Therefore, Akaiwa cannot teach reducing second order nonlinear distortion using a feed-forward technique in a compensation branch comprising each of those elements. Finally, after review of the text relating to FIG 1, it does not appear that there is a teaching of a feed-forward technique in Akaiwa, and the Examiner has not indicated where that teaching would be found.

In summary, Akaiwa in combination with Faulkner and Kenington fails to teach each and every claim limitation. Akaiwa does not teach the use of a compensation branch to reduce second order non-linear distortion using a feed-forward as recited in the claims.

It would be clear to those of skill in the art that the combination of these three references would not be successful, since the combined circuit would not perform the desired functionality. Kenington and Akaiwa do absolutely nothing to reduce second order distortion. The predistortion techniques of Kenington are not compatible with the baseband processing of Faulkner. This is yet more evidence rebutting the combination of these references for an obviousness rejection.

Since the combination of the Faulkner, Kenington, and Akaiwa references fails to teach each and every claim limitation, since Kenington teaches away from the use of their techniques for second order distortion (thus the combination of this references is not proper for supporting a finding of obviousness), and further since the combination of these references would not be successful, the rejections of claim 47 should be withdrawn.

The same arguments given above for the combination of Faulkner and Kenington, as well as the combination of Faulkner, Kenington and Akaiwa, apply to the other independent claims 81, 86, 91, and 98 as well. Therefore, the rejections of these claims should be withdrawn. In addition, for the same reasons, each of the rejections for the corresponding dependent claims should also be withdrawn.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application is earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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